Internet Backbone Infrastructure in Nepal

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Brief History of Connectivity Milestones

- **1913** Nepal establishes first telephone exchange in Kathmandu.

- **1914** Open Wire telephone line (Aakas Bani) from Kathmandu to Raxual with India.

- **1964** HF Radio to India and Pakistan to start International Telecom Service.

- **1982** Satellite Earth Station for direct International phone calls.

- **1994** Commercial Email Service started by Mercantile Office System.

- **1995** Launch of Internet by Private Operators, using 64kbps lease lines.
• **1996** Priavte Operators start using VSAT directly

• **1997** 1st optical fiber in Birgunj (Nepal) - Raxual (India) by Nepal Telecom with DOT India. *(No Internet)*

• **2000** Incumbant Nepal telecom finally starts Internet Service

• **2007** Internet bandwidth over Optical Link between Nepal and India via Bhairawa(Nepal)- Sunauli(India) by Nepal Telecom

• **2008** 1st Indo-Nepal crossborder connection by Private ISP in Bhairawa (Nepal) - Sunauli (India).

• **2011** 1st Nepal-China Optical Link with China by Nepal Telecom via Tatopani - Khasa (Never used)

• **2012** 2nd crossborder by Private ISP in Birgunj(Nepal) - Raxhaul(India)
Connectivity in Kathmandu
Cross Border Points

- Bhairawa
- Birgunj
- Biratnagar
- Rasuwagadi
- Tatopani

- Nepal
- China
- Tibet
- India
Major Fiber Backbone and Exits

OPGW+ADSS Fiber
Nepal Electricity Authority
Going Furthur...
IP Transit Points
Present IP Capacity

- Exponential Growth in paid IP Transit traffic
- Approx 50 Gbps of peak IP Traffic, 80-90G of connected capacity
- Approx 45-50 Gbps of peak traffic served through multiple local Google Cache
- 8-10 Gbps of localized CDN traffic.
- Hardly 1 Gbps Internal traffic over NPIX
What next?

- Capacity is never enough.
- Upgrade Upgrade and More Upgrade. How long?
- How can operators plan for next 5yrs growth? when we cannot forecast demand even for 1yr?
- What can we do?
- We = Govt, Regulatory, Service Provider, Vendors, all others?
Q&A